

# NEPRA PacketEar

— Newsletter of the New England Packet Radio Association —

PacketEar #48

July 1989

THURSDAY JULY 13TH, 7:30 pm — USER SESSION STARTS AT 7:00 pm

## When Lightning Strikes!

Nineteen eighty-eight was a big year for lightning damage to amateur stations in the northeast. Dozens of repeaters, digipeaters, and individual stations were victims of Thor's hammer, one station alone lost \$12000 worth of equipment in a single strike and nearly ended the career of the sysop. Many of us leave our rigs set up ready to go at a twist of a switch. This of course invites lightning into our station thru the antenna, the phone and power lines.

Our speaker for the July NEPRA meeting will be Gary Reardon, N1EDZ, a fellow packeteer, sysop and experimenter of a combined phone and packet BBS. Gary is a broadcast engineer and specialist in the installation of lightning and EMP protection for commercial broadcast stations.

In his presentation, Gary will give us some very valuable pointers on protecting our amateur radio stations from THOR, god of thunder and lightning. See the mailing panel of this newsletter for information on how to get to the meeting.

### COME TO THE USER SESSION

BRAND NEW at the July 13th meeting promptly at 7:00 pm there will a NEW USERS SESSION.

As many of you know or have guessed NEPRA and NEPRA members have contributed many hours and many dollars building a packet system which is one of the best in the country.

At our June meeting it was decided to experiment with reserving a portion of each monthly meeting directly for the users, new and old. Every attempt will be made to answer questions and address other needs of the users. There will be equipment available for demonstrations. Some of your local BBS sysops and network experts will be there to help you with your questions. This will be your opportunity to get help, or help a friend. In these sessions there will be no such thing as a dumb question. Every attempt will be made to keep the tech-jargon to a minimum. Bring a friend who needs help or wants to know about packet.

## NEPRA Accomplishments Summarized

Herb Salls, WB1DSW

Every once in a while it's good to step back and take stock of where one has been over the last few years and to get a thorough understanding of exactly what has been accomplished. We at NEPRA desire to do the same here with a capsule summary of some of the more recent and less recent network enhancements that have been installed throughout New England. Along the way perhaps the reader will gain a greater appreciation of how our efforts and

money have been expended and how the goals and objectives of the organization have been realized.

NEPRA supported as an initial attempt one of the first NET/ROM sites here in New England at W1XJ-1. Although this site continues to be single ported, it stands out as one of the best examples of how cooperation among amateurs and state and local officials can help to make the network prosper.

Our second major project was the facilitation of a multi-node site at the home of KALOXQ. Through the kind and gracious hospitality of Ken and with a few dollars from the club, we were able to put on one of the first triple node network switches in the six-state region.

At the same time, we embarked on an ambitious campaign of coordinating the various BBS stations into a cohesive and organized network through fostering the beginnings of the "New England BackBone Network"—a system whereby mail forwarding occurs on a frequency separate and aside from the normal "user" channels on 2 meters. This project continues even today as systems are added to this vital link and on many other frequencies as well.

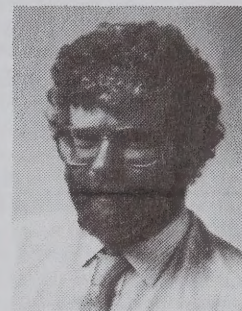
NEPRA has served and continues to serve as a focal point for individuals interested in learning about and setting up network operations on the amateur bands. Countless numbers of clubs and private amateurs have approached our organization for assistance with respect to hardware and software procurements, suggested frequency assignments and arrangements, and overall operating advice.

KA2DEW assumed the role of NEPRA Network Coordinator and his enthusiasm and dedication soon resulted in a proliferation of new and vibrant triple port nodes (such as

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## USER SUPPORT: AN EXCITING EXPANSION FOR NEPRA!

by  
Tom Walsh  
K1TW



All packet radio users are encouraged to attend the next meeting of the New England Packet Radio Association (NEPRA) on Thursday, July 13 at 7:30 P.M. NEPRA is considering whether there is sufficient interest amongst the user community to begin an active program of user support. Are you new to packet radio and need help through the complex issues of getting started? Or, are you an established packeteer looking to increase your understanding of how to get more out of your packet radio operation? Would you like to see user issues and problems dealt with on a regular basis as part of the monthly NEPRA program? I sure would! Then if so, plan on attending the next NEPRA meeting session. This will be a crucial meeting in determining how NEPRA can best serve the users. The meeting is held at BULL (formerly Honeywell Bull) in Billerica, Massachusetts. Take the Concord Road exit (Exit 27) off of Route 3.

NEPRA has done an outstanding job in getting hardware out there for users to connect up with. In doing so, NEPRA has achieved a reputation for excellence in the area of packet radio network development. NEPRA provides a solid reservoir of technical expertise in amateur packet radio which has proved invaluable in developing and encouraging networks and bulletin board systems in New England. The goal of an expanded user focus is to preserve NEPRA's core of network expertise, and by building upon this strength, provide additional services to the packet user community.

At its June 8 meeting, NEPRA established a 6-member User Support committee to address the issue of how to best provide for user needs. Four of the six members were able to meet June 19 along with Jim Morris K1UGM, representing NEPRA's elected officers. The User Support committee indicated it was willing to continue to meet on a regular basis until a user program has been firmly established in NEPRA, providing there is sufficient interest. Two recommendations have been made for

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## Walsh

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immediate implementation: (1) the issuance of a monthly newsletter to include a new "User Column" and (2) a USER SESSION to be held at each NEPRA meeting prior to the main business session.

### Recommendation 1: A Monthly Newsletter.

A regular newsletter every month is crucial not only to maintaining communications amongst the membership but to nurturing continuous growth of the organization. NEPRA's existing membership is scattered across the New England region, and many members just are not able to attend meetings on a regular basis. Putting out a monthly issue would fill a real need in maintaining a strong member base and interest. It will help assure a strong bond between the organization and its membership.

NEPRA is fortunate to have an excellent publishing capability through the efforts of Dave Crocker, W1TMO. A volunteer will be sought immediately to act as a monthly newsletter editor who will work with Dave. This individual will be responsible for planning each issue, developing regular contributors, assigning writing responsibilities, and seeing the material is assembled and submitted by deadline each month to Dave for publication. The deadline for a monthly issue must be the last Thursday of each month in order to assure a newsletter prior to the next month's meeting, according to Dave.

There are real problems to overcome in providing such a monthly service. First, NEPRA needs a volunteer editor who is willing to gather articles from the membership on a monthly basis. There should be regular monthly columns from the President, the Secretary including a summary of the previous meeting, meeting notices and feature articles when available. In addition, there should be a regular USERS Column addressing user problems and interests. The article you are reading now might serve as the first of what is hoped to be a user perspective, but a volunteer is also needed to do this column on a regular basis as well.

We need a full time editor, who with renewed user interest and support could easily come from one of the packet users. Network and BBS operators may also volunteer. I am sure the person who steps forward to do this will derive considerable satisfaction. I currently do a monthly newsletter for the Boston Computer Society Amateur Radio Interest Group, and it is a very rewarding experience which I heartily recommend to others. Each month the editor has a major influence on the direction and focus of the organization and can see the results of his or her efforts right there in print!

While we are establishing user support and providing there is member interest, the User Support committee will do what we can to keep things moving. Eventually, I'll be glad to work closely with and support a permanent NEPRA Editor/User Group columnist. In the end, success or failure of a monthly newsletter will rest with the response of the NEPRA membership as a whole.

### Recommendation 2: User Session.

The first USER SESSION is scheduled for the July meeting at 7:30. This will be an opportunity to discuss user issues and problems. Mort Cohan, K1IU, has volunteered to host the first session. This first session will be a general question and answer activity. Legitimately, we can discuss what we would like these user sessions to cover. We expect to draw upon the expertise throughout NEPRA to answer user questions. Importantly, these sessions could also give current BBS and node operators insights into what users like and don't like about current software and features of the operation. Maybe some good ideas for new network software, features and applications will come from this. If a question is asked which no one feels competent to answer on the spot, the question can be recorded and researched for answering at a subsequent meeting or maybe in the newsletter. Eventually, these sessions could feature packet demonstrations, problem and issue discussions, tutorials, and serve to educate users, both new and experienced, on the happenings in packet radio. Perhaps you had a question that you would like answered, but felt uncomfortable asking during the main meeting. Well, here's your chance in a session devoted to solving your problems, rather than network problems.

The committee also considered other longer term projects that users can become involved in. Not all of us have the resources, or even the interest to put up packet radio nodes or BBS systems. However, there are a number of other issues which are vitally important for packet radio to flourish, not only in New England but nationally that interested users can play a major role in. Among the ideas discussed were:

- (1) Presentations to Local Radio Clubs on Packet Radio
- (2) Preparation of User Guides for Packet Operation
- (3) Tutorials on Various Topics (e.g., AX.25)
- (4) NEPRA Packet Mail to members
- (5) Member Packet Directory in the Newsletter
- (6) Helping small BBS Users (e.g., the new KAM mini BBS)
- (7) User inspired applications
- (8) Developing close cooperation with the Boston Computer Society

### Amateur Radio Special Interest Group.

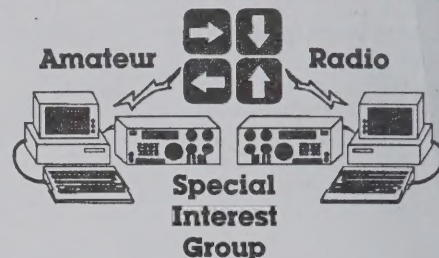
Well, as you can see there are lots of good ideas that can be explored. Much of this will take some time, but promises to provide some interesting projects for interested users.

NEPRA has provided leadership in developing our networking resources in New England. Once in a while, a window of opportunity opens but only for a short time. Here is such an opportunity for users to establish a forum where you can learn more about the fun of packet radio and how to exploit the resources NEPRA has helped developed. The next few months are an opportunity to greatly expand NEPRA's influence and impact on packet radio in New England and Nationally.

Let me conclude by urging a large turnout at the next and forthcoming NEPRA meetings. The User Program can only succeed if you

want it to. The success or failure of this program now rests with the interest level of the packet community. Its up to you now! See you at the July meeting and spread the word!

## The Boston Computer Society



Tom Walsh, K1TW

All NEPRA members are cordially invited to attend meetings of the newly formed Amateur Radio Interest Group of the Boston Computer Society (BCS). Anyone with an interest in amateur radio or shortwave listening (swl) applications for the personal computer is invited and welcome to attend. Members of the Boston Computer Society may receive our newsletter free of charge. Non-BCS members may subscribe to the newsletter.

The next meeting of the group will take place on Tuesday, July 11, in the auditorium at GTE Laboratories, 40 Sylvan Road, Waltham, MA. A beginners' session will be held at 7:00 p.m. followed by the main meeting at 7:30. Directions: Take Route 128 Exit 27B, Winter Street, west for a 1/4 mile. Turn left at Sylvan Road. Park in the inner courtyard.

The July meeting promises to be a festive occasion to celebrate our acceptance into the Boston Computer Society. Each meeting features a guest speaker. Our programs are intended to introduce amateur radio and shortwave listening to the personal computer enthusiast. Our speaker programs address a variety of radio-related computer applications including packet radio, other digital communication modes, amateur satellite operation, contesting and shortwave listening. If you can't make the July meeting, we meet on the first Tuesday of each month. Call 617-275-5882 for info.

## NEPRA Officers and Staff

President ..... Jack Callahan, N1BGG  
617-242-0897  
Vice President ..... Jim Morris, K1UGM  
Technical VP ..... Steve Ward, W1GOH  
Secretary ..... Steve D'Urso, K1MGO  
Treasurer ..... Herb Salls, WB1DSW  
Member-at-Large ..... Dave Crocker, W1TMO  
and PacketEar Editor 617-444-7724

Please send editorial contributions to:

W1TMO @ N1BGG

or to NEPRA PacketEar

David C. Crocker, W1TMO

80 Spring Road, Needham, MA 02194

Tel: 617-444-7020 — Fax: 617-444-8316

The Weekly Packet Net meets on Friday @ 8:00 pm on the 146.625 (-600) Haverhill machine.



# DOSGATE

Rich Bono, NM1D

The DOSGATE project started about seven years ago. I saw a need for users to understand that packet radio has a greater purpose in life than to simply be a great big network of Packet Bulletin Board Systems (PBBS). Packet promised to bring computers and radio together, and most users tended to think "PBBS" when they thought of packet radio. I see packet radio evolving into something more, and DOSGATE as a ray of light creeping under the door that is waiting to be opened!

If you are familiar with using a MS-DOS based PC, then you are familiar with the DOSGATE system. As DOSGATE is only a window between the Amateur Packet Network and the MS-DOS machine. The functions that may be performed by a DOSGATE system are only limited by your imagination.

DOSGATE is an alternative to the traditional PBBS. Where the typical packet radio BBS allows users to send/read/forward mail/messages/files to one another, and keeps us all in touch with the Amateur world, DOSGATE is not limited to these functions. DOSGATE allows the packet radio user to access a "PC" and perform almost any task. Just as if the user were sitting in front of a PC in their home or shack, the user can be in complete control of the computer and can decide which software application to use. Any hardware available to the DOSGATE system can be used by the remote network user. It does not take much imagination to understand the power available to the packet radio network with one of these machines. Just think about the applications that could be made available with a system that has a 32-bit, 25-MHz, 80386 CPU, an 80387 floating-point coprocessor, 16 Megabytes of RAM, and 300 Megabytes of disk storage, not to mention optical disk drives! Understand that this power is available to any user on the Amateur Packet Network, including users who have only "simple" computers at home, ie: C-64, or model 100 laptops. Even the remote user that does NOT have a computer at all can make use of the complete DOSGATE system!

This means the user connected to a DOSGATE system could do almost anything that is conceivable with a computer! One might choose to play a game, calculate the position of the OSCAR satellites, access an on-line callbook, develop and compile programs or send mail to another user. Yes, DOSGATE could perform all the usual PBBS functions in addition to providing advanced "higher level" functions.

## What is DOSGATE?

Technically DOSGATE is a "software device driver" for the MS-DOS operating system running on PC-compatible computers. Simply, this means that DOSGATE is a software product that runs in conjunction with MS-DOS and allows the packet world to interface to the PC via an RS-232 serial port. Basically, the computer "console" (the keyboard and CRT) is "paralleled" with the RS-232 serial port. When a remote packet user types something into his Terminal Node Controller (TNC), the data is entered into the system as if the user had been

sitting in front of the DOSGATE computer and typed the data on the local keyboard. Similarly, as data is sent to the local screen on the DOSGATE system, the same data is sent out the RS-232 port to be sent to the remote user via the Packet Radio Network.

Why does one need the DOSGATE driver to use the computer via packet?

The DOSGATE driver is needed to resolve several packet interface problems. All problems are not solved, however, and there are some limitations.

For instance, most packet users have "local echo" of their keyboard so they can see what they are typing without the usual packet delays. The first problem is that most DOS systems, not designed to be used remotely, also have local echo of the keyboard. If one were to simply interface the computer with the TNC, the results would be unsatisfactory in that the user would see each character echoed twice, once immediately as they typed the character, and then again, as echoed from the remote computer, but delayed by the turnaround delays of the packet network. DOSGATE attempts to solve this problem by cancelling the echoing of characters to the remote port.

Another problem solved by the DOSGATE driver, is knowing when a user is connected, and making the ID of the user known to the system. This allows the system to appear to be intelligent by knowing who the user is, without forcing the user to answer a "Please Login:" prompt. Additionally, by knowing when a user enters or leaves the system, certain housekeeping can be performed such as checking to see if the user has any unread mail upon entering the system, and preparing the system for the next user when the current user leaves the system.

Does this mean that DOSGATE allows a user to run every piece of software ever written for a PC?

Unfortunately, no. DOSGATE is a software solution that is tightly coupled with the operating system. Any programs that bypass the operating system and use the system BIOS or directly access the hardware will not be compatible with DOSGATE. This software will still work correctly for a local user, but the remote user will be unable to make use of it. Because of speed and other considerations, much of today's software directly accesses the hardware, and as such is not compatible with DOSGATE for a remote user.

Also, any software that simply erases the screen, or uses graphics, direct cursor addressing, or ANSI escape sequences should be considered non-DOSGATE compatible. By the very nature of packet, we have many different types of users on the network. Some are using C-64's with only 40 columns on their screens, some have model 100 laptops, with a limited LCD screen, others are using Mac's or AT's. This all boils down to one thing: for programs to be usable by the wide range of systems that appear on the packet network, all software should only use the normal printable ASCII character set. This means: no block graphic characters, no erasing of screens, no direct cursor addressing, etc. If you wanted to limit DOSGATE activities to a small group of compatible computers, then you could relieve many of these restrictions.

## What can one expect from the DOSGATE system?

There is no limit to the potential of the DOSGATE system. As DOSGATE allows the packet network user to control a computer that can be very sophisticated, or very simple, depending on the system configuration. The hardware required can be as simple as a basic PC with one floppy disk, or a more exotic 33-MHz, 80386 machine with an 80387 math coprocessor, 16 Megabytes of memory and 600 Megabytes of disk storage! Almost any hardware that could be connected to the computer could be controlled via software on the DOSGATE system. Your imagination is the only limit.

A local Amateur Radio club uses DOSGATE to provide several services to its members. For example, the club membership list is online to allow one member to get another member's address or phone number. The club newsletter editor uses DOSGATE to gather news, and to allow club members an easy method of submitting articles for the newsletter. When the newsletter is complete, it is placed on the DOSGATE system so that anyone can read it. Various club committees use the DOSGATE simple mail system to keep in touch with the members of the committee, and other club members. DOSGATE allows each member to have access to the "club computer"

## An example implementation:

The DOSGATE development system now online in Derry, NH (146.070 as NM1D-2) consists of the following hardware:

PC-XT with 640K of RAM  
10 Mb of hard disk storage  
8087 math co-processor  
Kantrex TNC 2  
ICOM 2 Meter 25 Watt Transceiver  
12 Volt Power Supply for the Transceiver  
2 Meter Omni-directional Antenna

Here is a sample of the software that is currently available to the users of the packet network:

**AUTOEXAM** - Allows a user to "take" an Amateur Radio exam, from Novice to Extra class. Generates a different exam for each session.

**SEESATS** - Generates REAL TIME output to show where various OSCAR satellites are currently located. Also useful in a prediction mode to allow one to plan for future passes.

**GCIRCLE** - The user inputs his Latitude and Longitude. The program then outputs a custom great circle bearing and distance chart for the DXCC countries list. Have your Latitude and Longitude handy, and get your printer ready or capture the output to your local disk.

**DOSMAIL** - A simple (non-autoforwarding) mail system, similar to a typical PBBS. Uses the standard Read #, List, Kill # commands.

**AUTOCALL** - An online (electronic) "CallBook" that allows you to find other Amateur Radio operators. Just type AUTOLOG NM1D and you will be given NM1D's name, address, license class, and previous call sign (if any).

**REPEATER** - An online database of repeaters in the local area. Simply type REPEATER 146.85 to receive a list of repeaters in the area

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## Amateur Community Helps Civil Air Patrol

W1VGZ/MA0006 Tom

Packet in the Massachusetts Wing of the Civil Air Patrol had its beginnings in December 1987 as a file on the K1UGM BBS. It could be found under "CAP" and had a following of five amateurs who were also members of Civil Air Patrol.

During March of 1988 the wing purchased an antenna and an Azden PCS 4000 transceiver for the "RP" portion for what would become CAP's own BBS (using CAP frequencies adjacent to the two meter band). K1UGM agreed to provide a TNC and arranged so that CAP could use his back-up computer with the understanding that we would give it up if the need arose. That was a good arrangement for CAP. K1UGM (Jim) and W1LHBU (Eric) agreed to help the CAP members learn how to manage a BBS and along with W1CE (Lew) kept an eye on its operation.

The first antenna was a single element whose pattern left something to be desired. It was replaced by a Cushcraft 6db gain antenna which improved the signal from the site to Dedham and Bellingham, MA.

In late May the K1UGM site was hit by lightning putting the CAP BBS off the air for just over a week—in fact most all the equipment was off for a day while many helped get the main station back on the air. The CAP transceiver had been damaged and had to be repaired along with other equipment at the site.

As the year progressed much was learned about the operation of a BBS and the duties of a SYSOP. By year's end there were about a dozen CAP members using the station in Wakefield. The easiest way for a CAP member to come on board—because they are not hams nor are they computer types—was with an LA34 dumb terminal which CAP had available in abundance from a LL BBS it tried to set up.

At this writing there are 27 Mass Wing persons, two from R.I., two from N.H. and one

from NYC using the BBS at Wakefield. In addition, CAP now has another BBS system up and running in Dedham. Both boards run the WORLI BBS software under special permission granted to the CAP by WORLI. CAP also has three stations in Mass Wing on HF Packet as Gateways to other states in the USA.

## A Letter from Mike

Dave, soon our Northern California Packet Association newsletter will be coming out, and we'd like to exchange with the PacketEar. What address should we send a copy of our newsletter to?

— TNX! -Mike, K3MC

[Ed Note: Mike, the NEPRA address is shown on the mailing panel. That would be a good place to send a copy of your newsletter and also to request Herb to add your name to our mailing list. I'd like to see your newsletter also. 73, Dave]

## Accomplishments

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found at K1TR). NEPRA also coordinated and supported a dual port node atop Mt. Washington in New Hampshire which serves as a substantial link between Vermont, Maine and Canada. Mt. Washington continues to be a choice site and NEPRA is working with State and Federal officials to ensure that availability is undisturbed. Also, KA2DEW, through his many associations with eager amateurs in New York state has managed to set up and maintain several good-to-excellent paths between the Boston area and NY/NJ.

For the year to come, we look forward to strong and rapid growth of higher speed network functions being implemented here in New England. This, combined with our interest in seeing new modes (TCP/IP and TexNet) being furthered, will mean a genuine increase in information flow throughout the Northeast. We look forward to a sparkling year and hope that you'll join us in our goal of providing the best-run, best-loved network in America.

## DOSGATE

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on 146.85 MHz, or type REPEATER BOSTON to receive a list of repeaters in Boston.

HELP - When you don't know what to do, this command may help. Type HELP to receive a list of some of the more popular commands, or type HELP MAIL to receive help on the mail utilities.

Games - Various text-based "adventure" style games that can be "played" in real time are available.

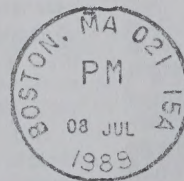
## NEPRA PacketEar

**New England Packet Radio Association**  
P.O. Box 208  
East Kingston, NH 03827

**MEMBERSHIP** in NEPRA is open to all amateurs with an interest in packet radio. Annual dues are \$15. The expiration date for current members is given on your mailing label. If the date has been circled in red, the expiration date is imminent. The address for new memberships or renewals is given above.

**NEPRA MEETINGS** are held at the Honeywell plant cafeteria in Billerica at 7:30 PM on the Second Thursday of each month. Take Route 3 to exit 27, Concord Road. Proceed West a couple of hundred yards and you will see a sign and entrance to Honeywell on the left. Parking and entrance are at the rear of the building. Talk-in is available on 147.12 MHz.

**NEXT MEETING — JULY 13th!**



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